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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,269	11/17/2003	Damion T. Searls	884.242US2	6473

7590 12/29/2004
Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3743

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/716,269	Applicant(s) SEARLS ET AL.	
	Examiner Tho v Duong	Art Unit 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 6-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Receipt of applicant's amendment filed 10/12/2004 is acknowledged. Claims 1-16 are pending. Claims 6-16 have been withdrawn from further consideration.

Response to Arguments

Regarding to the applicant's argument about the title, the examiner wants to remind the applicant that the elected invention is a method for making a passive phase change material heat sink. The current title is not specific in which it still indicates the non-elected invention, which is a heat sink apparatus. The objection is hereby repeated.

Applicant's argument that Baer fails to disclose "injecting a plurality of spheres into the cavity" or "injection" has been very carefully considered but is not deemed to be persuasive. Applicant is reminded that claims are given the broadest reasonable interpretation, in which the term "inject" has been defined as "to introduce into something forcefully" by Merriam Webster's Collegiate Dictionary, 10th Edition. Furthermore, reference to Legare (US 6,686,003) discloses (column 8, lines 46-52) a specific evidence of broadest reasonable interpretation of "inject" such as "pouring or any other means of placing a material into a fill hole". Baer discloses (figure 1 and column 4, lines 1-6) that the container (3) includes port (9), which permits container to be filled with water and to introduce spheres (7) into the container. It is clearly to see that the spheres do not happen to be in the container but the spheres are forced to be into the container through port (9).

Applicant's argument that Baer fails to recite the word "ramp" has been very carefully considered but is not persuasive. The term "ramp" has been defined as "a sloping way" by Merriam Webster's Collegiate Dictionary, 10th Edition. Baer clearly discloses (figure 1) that the

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cavity has a plurality of inclined walls shown at (11,25), these inclined walls are considered to be ramps or “sloping ways”.

Applicant’s argument that Van Iperen fails to disclose “forming a conductive structure having cavity” because plastic bottle (11) is not a conductive structure, has been very carefully considered but is not deemed to be persuasive. Applicant’s argument is not persuasive because of either one of the reasons as follows:

a) Van Iperen discloses (figure 1 and column 8, line 19) that the “plastic bottle (11)” is a heat sink. It is inherently that the bottle (11) is a conductive structure because heat sink stores heat that transferred from outside of the heat sink.

b) Most of plastic has poor thermal conductivity, however, it is still considered to be a conductive material since all the material except for vacuum, conducts heat in some degrees.

In view of applicant’s amendment, the 112th rejection against claims 5 is now withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Baer (US 5,070,933). Baer discloses (figures 1 and 4) a method comprising forming a conductive structure (3) having a cavity having a plurality of ram structures at (11,25) formed on the cavity surface;

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injecting a phase change material (5) into the cavity; injecting a plurality of solid spheres (7) into the cavity through an injection hole (9) in the heat sink; and sealing the cavity at the port (9). The term "inject" is broadly interpreted as "to introduce into something forcefully".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Van Iperen et al. (US 4,923,077). Van Iperen discloses (figure 1-3 and column 9, lines 35-69) a method comprising forming a conductive structure (11) having a cavity including a cavity surface having a plurality of ram structure formed on the cavity surface; a phase change material of hydrate salt and silicon dioxide particles are injected into the cavity through injection hole (27) and the cavity was sealed by cap (28). Van Iperen further discloses that the silicon dioxide particle has a trade name of Cab-O-Sil, by Cabot Corporation, which has a solid spherical shape. Applicant is advised to see Salyer (US 5,254,380, column 3, lines 43-60) for the characteristic of the Cab-O-Sil. Furthermore, applicant discloses in the specification that on page 7, lines 16-19, that hydrate salt is considered as TH58 material and suitable material for the invention. Therefore, the hydrate salt as disclosed by the prior art is considered to read as a TH58 material.

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Conclusion

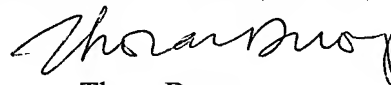
The reference made of record and not relied upon is considered pertinent to applicant's disclosure.

Legare (US 6,686,003) discloses a high performance fire-protection containers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 571-272-4791. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong
Examiner
Art Unit 3743



TD
December 17, 2004